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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/506,386

09/02/2004

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1647

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EXAMINER

WANG, EUGENIA

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/506,386	<b>Applicant(s)</b> BEDNARZ ET AL.	
	<b>Examiner</b> EUGENIA WANG	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-16 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/22/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. I response to the amendment received March 10, 2008:
  - a. Claims 10-16 are pending with claims 14-16 being withdrawn as being drawn to an unelected invention.
  - b. The rejection of record is maintained. Since no amendments to the claims were made, and the same rejection that was applied on the last final action is still applied, this action is final.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on March 10, 2008 has been entered.

### ***Information Disclosure Statement***

3. The information disclosure statements filed January 22, 2008 has been placed in the application file and the information referred to therein has been considered as to the merits. (Note, only the English abstract of the foreign reference has been considered. For consideration of the full disclosure, Examiner invites Applicant to submit the full translation.)

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3544374 (D'Alessandro et al.).

As to claim 10, D'Alessandro et al. teaches a method to prevent corrosion of hydrogen permeable membranes in anodes (col. 2, lines 27-31). The method comprises applying a direct current potential between the cathode and anode of the fuel cell, thus reducing it with respect to the cathode (col. 2, lines 45-51). Furthermore, corrosion prevention is achieved by removing hydrogen from the membrane, where hydrogen removal can be achieved by flushing the membrane with an inert gas, including nitrogen, carbon dioxide, flue gas, argon, and **steam** (col. 2, lines 51-70). In addition, it is said that steam is used to purge all of the hydrogen from the vicinity of the membrane (col. 2, lines 70-72; col. 3, lines 1-7). It is noted that although molten sodium hydroxide is embodied for the electrolyte, it is also recognized that that molten alkali metal hydroxides and molten carbonates can be used with such an invention, thus teaching the use of molten carbonate fuel cells (col. 3, lines 59-60; col. 5, lines 27-41). Flushing the anode membrane and applying the direct current would inherently yield the anodes inert, since the applies the same process as claim 10 of the instant application.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

“In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that D'Alessandro et al.'s method uses steps employed by the instant application. Therefore, the resulting state of the anodes would be in the same state (inert) after the application of the same method.

The Examiner requires applicant to provide that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted].” The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

As to claim 11, D'Alessandro et al. teaches flushing the anode membrane with an inert gas including nitrogen, **carbon dioxide**, flue gas, argon, and steam prior to steam treatment (col. 2, lines 51-72; col. 3, lines 1-7). Therefore supplying CO<sub>2</sub> as the inert

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gas prior to steam is one embodiment of D'Alessandro et al. See the drawing for evidence that inert gas and steam are used for the flushing (via valves [31] and [26], respectively).

Alternately, it would have been obvious to choose carbon dioxide as the inert gas, as it is one of the inert gases listed in a short laundry list of inert gases that can be used for flushing, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As to claims 12 and 13, D'Alessandro et al.'s method teaches that the inert gas (the embodiment where carbon dioxide is used is chosen) is introduced and is followed by a steam purging (col. 2, lines 51-72; col. 3, lines 1-7). Therefore carbon dioxide is providing the initial inerting. After it is used to flush, steam flushing follows it. Thus it can be interpreted that the carbon dioxide is reduced (to zero) prior to steam flushing.

Alternately, it can be interpreted that both carbon dioxide and steam are flowing at the same time (after the steam is introduced). However, there is motivation to reduce the carbon dioxide flow once steam flow is introduced; the motivation is to accommodate the space that needs flushing. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to lower the carbon dioxide flow once steam is introduced in order to have the correct flow as to not overflow the anode chamber while inerting.

***Response to Arguments***

5. Applicant's arguments filed March 10, 2008 have been fully considered but they are not persuasive.

Applicant argues that no electrolysis takes place in D'Alessandro et al.'s cell. Specifically Applicant argues that D'Alessandro et al. flushes the anode with inert gas, wherein if electrolysis were present a non-inert gas would be presented in the vicinity of the anode.

Examiner respectfully disagrees with Applicant's position. The fact that D'Alessandro et al. does teach of flushing with inert gases, it does not negate the fact that steam is taught to be used, wherein steam (water vapor) electrolyzes upon the application of a current. It also does not negate the fact that D'Alessandro does teach the method as claimed by the instant application. Therefore, a basis of inherency was made and is maintained, as no proof is provided that the process used by D'Alessandro would not inert via electrolysis of the steam (water vapor). There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. *Schering Corp. v. Geneva Pharm. Inc.*, 339 F.3d 1373, 1377, 67.

Applicant provides a translation from the German language Wikipedia which states that a minimum voltage must be applied for electrolysis to take place (wherein Applicant contends this condition does not exist in D'Alessandro et al.'s fuel cell.)

Examiner would like to submit that a translation from Wikipedia is not convincing evidence, since Wikipedia can be easily altered. Accordingly, the teachings of Wikipedia cannot be looked at to prove one thing or another.

Applicant provides pages from a text book, *Electrochemistry I*, which discusses the decomposition voltage that must be exceeded in order to have electrolysis (wherein Applicant contends this condition does not exist in D'Alessandro et al.)

Examiner would like to note that the translated portion is not found to be convincing proof that D'Alessandro et al.'s fuel cell does not inert the anode by electrolysis (as both an electrical current and water vapor is provided). First, it is noted that in *Electrochemistry I*, the electrolysis being dealt with is of HCl and not water vapor. Therefore, no comparison between the electrolysis in *Electrochemistry I* and D'Alessandro et al. can be drawn. Furthermore, it is noted that the decomposition of aqueous HCl is 1.37 volts, wherein *Electrochemistry I* specifically mentions that decomposition voltages for other electrolyses are of a similar order of magnitude (1 to 4 volts). Again, this fails to provide solid proof that not electrolysis takes place in D'Alessandro et al., as water is not specifically mentioned. Additionally, Examiner would like to submit that D'Alessandro et al.'s teaching does leave reasonable expectation that the decomposition voltage is met. D'Alessandro et al. clearly teaches that a potential of at least 3 volts is applied, and it is further noted that even higher potentials may be used (col. 3, lines 7-36). It is uncertain that how a teaching applying 3 volts or higher would not result in the electrolysis as claimed, since the point 3 volts covers a good portion of the range of decomposition voltages listed in *Electrochemistry I*



and since D'Alessandro et al. even teaches of applying higher voltages. Accordingly, *Electrochemistry I* does not provide positive proof that D'Alessandro et al.'s cell does not undergo electrolysis while inerting. In fact, since D'Alessandro et al. teaches of applying potential up to 3 volts and more, one of ordinary skill in the art would gather that this potential would be sufficiently high to electrolyze water (as *Electrochemistry I* states that most decomposition potentials lie between 1-4 volts).

Applicant submits that DE 19622693, provided in the information disclosure statement (IDS), states that while shutting down an electrolysis plant, a protective potential is applied, wherein the voltage is sufficiently low that no electrolysis takes place.

Examiner is unsure about how Applicant intends the piece to be used. The abstract has been considered as prior art, as it was submitted on the IDS, but is not seen as proof to the fact that electrolysis does not occur in D'Alessandro et al. The portion that Applicant relies upon (col. 1, lines 1-17) is in German and does not have a translation, and so Examiner cannot consider that portion at all. Additionally it is drawn to the shutting down of an electrolysis cell and now a fuel cell, as is embodied by D'Alessandro. Therefore, it is not convincing to the fact that D'Alessandro does not provide the same inerting method as claimed.

### **Conclusion**

6. This is a substitution of applicant's earlier Application No. 10/506386. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had

been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. W./

Examiner, Art Unit 1795

/Gregg Cantelmo/

for E. Wang, Examiner of Art Unit 1795